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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|----------------------|
| 10/677,318 | 10/03/2003 | Medhat A. Toukhy | 2003US310 | 9492 |
| 26289 | 7590 | 05/21/2008 | EXAMINER | |
| AZ ELECTRONIC MATERIALS USA CORP. ATTENTION: INDUSTRIAL PROPERTY DEPT. 70 MEISTER AVENUE SOMERVILLE, NJ 08876 | | | | SCHILLING, RICHARD L |
| ART UNIT | | PAPER NUMBER | | |
| 1795 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 05/21/2008 | | PAPER | | |

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| APPLICATION NO./ CONTROL NO. | FILING DATE | FIRST NAMED INVENTOR / PATENT IN REEXAMINATION | ATTORNEY DOCKET NO. |
|---------------------------------|-------------|---|---------------------|
| 10677318 | 10/3/03 | TOUKHY ET AL. | 2003US310 |

EXAMINER

Richard L. Schilling

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| ART UNIT | PAPER |
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1795 20080513

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/677,318
Filing Date: October 03, 2003
Appellant(s): TOUKHY ET AL.

Alan P. Kass

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3-26-08 appealing from the Office action
mailed 11-08-07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|--------------|-----------------|------|
| 2002/0098440 | Sato et al. | 7-02 |
| . | Hasegawa et al. | 8-01 |

6,800,414

Nishimura et al.

10-04 (filed 6-14-01)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-9 and 32-37 are rejected under 35 USC 112, first paragraph, because the specification, while being enabling for polymer and radiation absorber containing compositions for antireflection layers, does not reasonably provide enablement for full scope of the antireflection layers of the claims on appeal which include compositions with only the listed basic compounds. Polymers are necessary as binders for the antireflection layers to bind or hold the basic compounds and the radiation absorbers, if the polymers do not also have a radiation absorbing function. The polymers are also necessary to form distinct layers which are used, as disclosed in the specification, to absorb radiation to prevent the radiation from reflecting back into overcoated photoresist layers. Radiation absorbers are necessary to provide the antireflection function; and the specification discloses separate radiation absorbers from the basic compounds of the claims on appeal. That is, the basic compounds listed in claim 1 on appeal do not have a disclosed radiation absorbing function, as well as not having a layer forming function, so that the specification fails to show how to use them to form antireflection layers to be overcoated with radiation sensitive photoresist layers. The claims on appeal are not considered to contain ingredients not recited in the claims particularly since the specification does not contain a definition of antireflection layers to further limit the antireflection layers.

2. Claims 1-9 and 32-37 are rejected under 35 USC 102(b) as being fully met by Hasegawa et al. or Sato et al.

Hasegawa et al. (col. 26, line 56 – col. 28, line 13) discloses coating compositions with polymers, photoacids that absorb imaging radiation to release acids (thereby preventing the absorbed imaging radiation from reflecting) and basic amine compounds including purines, adenines and guanine listed in claim 1 on appeal.

Sato et al. (paragraphs 101-109) disclose coating compositions comprising polymers, radiation absorbing photacids, optional dyes, which absorb radiation to inherently reduce reflection, and basic amine compounds including purines listed in claim 1 on appeal.

The coating compositions of Sato et al. and Hasegawa et al. would have inherently formed layers that would have inherently reduced reflection of imaging radiation if used as an underlayer for a photoresist layer. While the compositions of Sato et al. and Hasegawa et al. are not disclosed as being used as photoresist underlayers but rather as photoresist compositions, they are still materially the same as the compositions set forth in the claims on appeal including claim 9 which has one or more additional components of photoacids, dyes or polymers. The same basic compounds of Sato et al. and Hasegawa et al. as listed in claim 1 on appeal would have been soluble in the same solvents. Also, the claims on appeal define solubility relative to a solvent which is not identified in the claims so that insolubility in some solvent, e.g. water or

water immiscible organic solvent, is all that is required by the claims on appeal for the basic compounds.

3. Claims 1-9 and 32-37 are rejected under 35 USC 102(e) as being fully met by Nishimura et al.

Nishimura et al. (col. 50, lines 1-40; col. 51, lines 3-29; examples 3,4,8,10,11, table 1 on cols. 72 and 73) disclose coating compositions containing polymers, radiation absorbing photoacids and basic amine compounds including purines and benzimidazoles as listed in claim 1 on appeal. Optional halation (i.e. reflection) inhibitors are also disclosed. While the compositions of Nishimura et al. are photoresist compositions and not disclosed as being used to form underlayers, they are materially the same as the compositions of the claims on appeal with the same basic compounds having the same solubility properties. Also, solubility properties are not limited in the claims on appeal since the recited photoresist solvent is not identified. Layers formed from the compositions of Nishimura et al. would have inherently absorbed radiation and reduced reflection by the radiation absorbing photoacids and optional halation inhibitors.

(10) Response to Argument

In regards to the rejection on the lack of an enabling disclosure of how to use the claimed compositions to form antireflection layers with only the basic compounds being present, appellants argue that antireflection layers are known in the art to contain polymer binders and radiation absorbers. However, the specification does not contain a limiting definition of antireflection coating compositions as containing

polymers and absorbers or radiation absorbing polymers. The claims on appeal are not considered to contain components not recited in the claims particularly since any essential missing components could have been added by amendment. Appellants' argument that the specification contains many examples of antireflection layer compositions is unconvincing since there are no examples or disclosure of the use of antireflection layer compositions with only the basic compounds required by the claims on appeal. The specification lacks guidance of how to use the compositions of the claims on appeal without the compositions containing polymers and absorbers or radiation absorbing polymers to form antireflection layers to be overcoated with photoresist layers.

In regard to the rejection using Hasegawa et al., appellants argue on pages 17-19 of their brief that there is no basis for the compositions of Hasegawa et al. to inherently have an antireflection function. However, as pointed out in the above rejection, the photoacids of Hasegawa et al. absorb imaging radiation which would have reduced reflection (the absorbed radiation would not be available for reflection). Also, the compositions of Hasegawa et al. have all of the components required by the claims on appeal by having basic compounds listed in claim 1 on appeal. The claims on appeal do not require the presence of radiation absorbers or antireflection compounds in addition to the recited basic compounds.

. In regards to all of the prior art 102 rejections, appellants argue that the applied prior art do not meet the solubility or insolubility requirements for the basic compounds set forth in the claims on appeal. However, as noted in the above rejections, the same

compounds have the same properties including solubility properties. Also, the claims on appeal define solubility relative to a solvent which is not specified making the solubility of the basic compounds listed in the claims on appeal unspecified.

. In regard to all of the applied prior art rejections, appellants argue that the compositions of the applied prior art containing the basic compounds listed in the claims on appeal are photoresist compositions and not compositions for forming antireflection underlayers for photoresist materials as the compositions of the claims on appeal are intended to be used. However, the intended use of the compositions is not set forth in the claims on appeal, and even if set forth, would not materially distinguish the compositions of the claims on appeal from the same compositions of the applied prior art. The claims on appeal do not exclude photoresist compositions as in the applied prior art.

. **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Richard L Schilling/

Richard L Schilling

Primary Examiner, Art Unit 1795

Conferees:

Application/Control Number: 10/677,318
Art Unit: 1700

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/Cynthia H. Kelly/

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/Kathryn Gorgos/

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